

What is claimed is:

31 1. A system for connecting a male member to a female member, the male and female members being relatively displaceable substantially along an axis lying in a plane, the system comprising:

5 a pair of first projections<sup>12</sup> each extending parallel to the plane and each having a first end spaced from a second end, each first end being fixed to a first one of the male and female members, and each second end being resiliently movable with respect to the first member, each second end including a first one of a cavity feature and a protrusion feature; and

10 a pair of grooves in a second one of the male and female members, each groove extending parallel to the axis and receiving a respective one of the pair of first projections, and each groove including a second one of the cavity feature and the protrusion feature, the second feature cooperatively engaging the first feature such that the first member is centered about the axis with respect to the second member and such that the first member is retained along the axis with respect to the second member.

2. The system according to claim 1, further comprising:

at least one second projection fixed to the first member and extending parallel to the plane, each second projection having at least two faces slidingly engaging the second member; and

5 at least one of the grooves including at least two surfaces confronting respective ones of the at least two faces and preventing relative displacement of the first and second members perpendicular to the plane.

3. The system according to claim 2, wherein there are a pair of the second projections, each of the second projections slidingly engaging respective faces of corresponding ones of the pair of grooves.

31 4. The system according to claim 3, wherein the pair of first projections, the pair of grooves, and the pair of second projections commonly lie in the plane.

5. The system according to claim 2, wherein each second projection is substantially rigidly fixed to the first member.

6. The system according to claim 1, wherein each groove includes a generally C-shaped channel opening toward the axis.

7. The system according to claim 1, wherein each second end being resiliently movable absorbs relative vibration between the first and second members.

8. The system according to claim 1, wherein the cavity feature includes an aperture extending from each groove through the second member and the protrusion feature includes a tip of each second end.

9. The system according to claim 8, wherein the tip of each second end is visible in the aperture of each groove when the first member is retained along the axis with respect to the second member.

10. The system according to claim 8, wherein the tip of each second end tapers from a first size at least as large as its corresponding aperture to a second size smaller than the corresponding aperture.

11. A system for connecting a male member to a female member, the male and female members being relatively displaceable substantially along an axis lying in a plane, the system comprising:

a pair of first projections each extending parallel to the plane and each having a first end spaced from a second end, each first end being fixed to a first one of the male and female members, and each second end being resiliently movable with respect to the first member to absorb relative vibration between the male and female members;

a pair of grooves in a second one of the male and female members, each groove extending parallel to the axis and receiving a respective one of the pair of first projections;

10 a tip formed on each second end and an aperture extending from each groove through  
the second member, each tip tapering from a first size at least as large as its corresponding  
aperture to a second size smaller than the corresponding aperture, and each tip cooperatively  
engaging its corresponding aperture such that the first member is centered about the axis with  
respect to the second member and such that the first member is retained along the axis with  
15 respect to the second member; each tip being visible in its corresponding aperture when the  
first member is retained along the axis with respect to the second member and

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a pair of second projections fixed to the first member and extending parallel to the  
plane, each second projection having at least two faces slidably engaging corresponding  
surfaces in each groove to prevent relative displacement of the first and second members  
perpendicular to the plane.

12. A method of connecting a male member to a female member, the male and female  
members being relatively displaceable substantially along an axis lying in a plane, the method  
comprising:

providing a first one of the male and female members with a pair of first projections  
each extending parallel to the plane and each having a first end spaced from a second end,  
each first end being fixed to the first member, and each second end being resiliently movable  
with respect to the first member, each second end including a first one of a cavity feature and  
a protrusion feature;

providing a second one of the male and female members with a pair of grooves, each  
10 groove extending parallel to the axis and receiving a respective one of the pair of first  
projections, and each groove including a second one of the cavity feature and the protrusion  
feature;

aligning the male member with respect to the female member along the axis such that  
each groove will receive a respective one of the pair of first projections; and

15 relatively displacing the male member with respect to the female member until the  
second feature cooperatively engages the first feature such that

the first member is centered about the axis with respect to the second  
member,

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the first member is retained along the axis with respect to the second member, and

relative vibration between the first and second members is absorbed.

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13. The method according to claim 12, further comprising;  
providing the first member with a pair of second projections extending parallel to the plane, each second projection having at least two faces confronting the second member;  
wherein relatively displacing includes the at least two faces one of the grooves  
5 slidingly engaging respective surfaces of the groove such that the first and second members are prevented from relative displacement perpendicular to the plane.

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14. The method according to claim 12, wherein the protrusion feature is visible in the cavity feature when the first member is retained along the axis with respect to the second member.